



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: PW2040 BYPASS RATIO:  
 UNIQUE ID NUMBER: 1PW040 PRESSURE RATIO ( $\pi_{co}$ ): 27.9  
 COMBUSTOR:  
 ENGINE TYPE: TF RATED THRUST ( $F_{oo}$ ) (kN): 181.8

REGULATORY DATA **\*\* DATA SUPERSEDED \*\* SEE FOLLOWING UID FOR REVISED DATA: 4PW073**

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>oo</sub> (g/kN) or SN	5.1	43.2	63.9	15.2
AS % OF ORIGINAL LIMIT	25.9	36.6	66.6	75.6
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			83.3	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			100.3	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			113.9	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			135.3	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
 - DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>oo</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	1.761	0.03	0.40	34.30	
CLIMB OUT	85	2.2	1.448	0.04	0.40	27.30	
APPROACH	30	4.0	0.493	0.18	2.00	10.60	
IDLE	7	26.0	0.155	2.25	25.10	4.20	
LTO TOTAL FUEL (kg) or EMISSIONS (g)			625	574	6412	10025	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>oo</sub> (g/kN) or AVERAGE SN (MAX)				3.3	35.2	55.1	11.8
SIGMA (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>oo</sub> in g/kN, or SN)							

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.9
TEMPERATURE (K)	298
ABS HUMIDITY (kg/kg)	

### FUEL

SPEC	Jet A
H/C	1.89-1.91
AROM (%)	

MANUFACTURER: Pratt & Whitney  
 TEST ORGANIZATION:  
 TEST LOCATION:  
 TEST DATES: 08/08/1983-10/08/1983

### REMARKS

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)